Amendments to the Specification:

Please replace paragraph number 0039 with the following rewritten paragraph:

Fig. 14 shows that a biochip coated with monoclonal antibody against HIV P-24 antigen captured the antigen. In this example, the chip was coated by bovine IgG (A) or monoclonal antibody against HIV P-24 antigen (B). P-24 antigen was added to blood, and was captured by the chip that was coated by monoclonal antibody (B) as shown in the graph, but not by bovine IgG (A).

Please replace paragraph number 0040 with the following rewritten paragraph:

Fig. 15 shows that a biochip coated with HIV P-24 core protein captured anti-P-24 monoclonal antibodies. In this example, the chip was coated by HIV gp120 envelope protein (A) or HIV P-24 core protein (B). Monoclonal antibody (Mono Ab) against P-24 was added to blood, and was captured by the chip that was coated by P-24 antigen (B) as shown in the graph, but not by gp120 antigen (A).

Please replace paragraph number 0068 with the following rewritten paragraph:

In an alternative arrangement, as shown in Fig. 1B, the screening capture device may also be located within the blood bag (200). This arrangement is particularly advantageous in a system in which the blood from a donor is collected in multiple blood bags. In such a system, the screening capture device can be arranged inline with a first bag or diversion bag that collects the initial blood collected from a subject. For example, 10-40 ml may be collected in the first bag. The first bag may then be removed or bypassed so that the remainder of the collected blood is stored in one or more additional blood bags. The bag containing the biochip may then be placed on a slow shaker to maximize contact of the biochip with blood.

Please replace paragraph number 0075 with the following rewritten paragraph:

In addition to the "tandem" arrangement of the two biochips, the present invention also contemplates that more than two biochips may be arranged in tandem. Furthermore, in an alternate embodiment, the present invention contemplates that a single biochip, for example, a single "cylindrical" biochip may be used instead. In this cylindrical biochip embodiment, for example, one half of cylindrical biochip could be used for the NAT assay while the other half of the cylindrical biochip could be used for the immunoassay (see Figure 1B). The size and dimensions of the biochips should be designed to maximize contact between the blood sample and the surface of the biochip. When using a single biochip, a different (more harsh) elution is used for the nucleic acids tested while a less harsh elution is used for the antigens and antibodies tested. One of the skill in the art would also recognize that while the embodiment discussed herein discloses the NAT assay biochip as the first biochip and the immunoassay biochip as the second biochip, the relative arrangement of the biochips are interchangeable.

Please replace paragraph number 0079 with the following rewritten paragraph:

In one embodiment, as shown in Fig. 4A, different analytes are spotted on microarray slides in a latitudinal linear fashion, in the direction of blood flow 20a, so that every analyte covers the entire length of the biochip (20), to maximize biochemical interaction or binding between the target agent or component of interest in the blood and the latitudinally arranged analyte microarray. Thus, one of the features of the present invention is that multiple spots are provided for detecting particular analytes so that even non-homogeneously distributed analytes may be detected. As shown in Fig. 4A, therefore, the respective probe elements of the analytes of interest are latitudinally, or linearly arranged on the biochip in the direction of blood flow 20a across the biochip (20). Preferably, the binding surface will be three-dimensional to increase binding capacity. For example, currently available three-dimensional biochips in gel format may be used, provided that the leaching is minimized. Therefore, the surface selected preferably is a three-dimensional solid surface that provides more surface

area and more binding capacity, with minimized leaching from the surface. Examples of such surfaces are plastic, silicon, rubber and resins. On the surface, functional groups may be attached by chemical linking to allow for different binding chemistry to occur with disease agents. The surface mesh preferably has spaces that are submicron in size to avoid catching red blood cells. Commercially available HypoGel (Sigma-Aldrich Corp., St. Louis, MO) is one example of a three-dimensional binding surface, such as shown in Fig. 4B, and provides a three-dimensional matrix that enhances the space for conjugation/capture as well as increases the sensitivity. HypoGel® is a hydrophilic polystyrene gel-type resin. Based on a low crosslinked (1% DVB) polystyrene matrix, oligo ethylene glycols are grafted to form a high loaded hydrophilic resin. The reactive centers are located at the terminus of the glycol spacers. NMR measurements indicate their high flexibility. A glass chip with similar capabilities to the Hypogel may be designed to maximize the capture of disease agents, as shown in Figs. 4C and 4D. Fig. 4C shows a glass biochip with wells. The surface in the wells are rough with small protrusions to maximize surface area and binding capacity. Fig. 4D shows another embodiment of a glass biochip in which the entire surface of the biochip is rough with villi-like protrusions. The villi-like protrusions enhance the surface area for binding and form a mesh-like surface with sub-micron size spaces in-between. The material of the biochip should be selected to maximize the binding surface to increase binding capacity, without resulting in leaching of the bound target molecules to the surrounding bio-fluidic environment.

Please replace paragraph number 0080 with the following rewritten paragraph:

Fig. 5 discloses one example of a biochip (20) produced by Rockefeller University's Gene Array Resource Center that is designed for performing a NAT system assay that spots the analytes listed in box 22, below ~~in Fig. 5~~. The specific analytes disclosed in ~~Fig. 5~~ box 22 include antibodies for capturing the antigen and nucleic acid complexes, while the only nucleic primers disclosed for NAT capture are from the NTR region for HCV and the LTR region for HIV.

Box 22

Analytes to be Spotted on the Biochip

HCV: mAb against core (C22)	MAb against env E1E2
mAb against NS3, NS4, NS5	
HIV: mAb against GP120	mAb against P24 core
mAb against P55 core	mAb against P31
HBV: mAb against core	mAb against HBsAg
mAb against HBeAg	mAb against S1 and S2

Also, nucleic acids themselves may be spotted for hybridization

HCV: 5' end NTR	
HIV: LTR region	Pol gene region
HBV: preS1/2 and S region	

Please replace paragraph number 0117 with the following rewritten paragraph:

Following capture of the West Nile virus with antibody, the virus was lysed and viral RNA detected and quantitated by Taqman PCR. See, *e.g.*, Shymala 2002, 2003(a) and 2003(b). Briefly, the captured viruses were suspended in 100 ul Taqman reagents and transferred to Taqman microtiter plate for detection by Taqman PCR. The Taqman reaction mix in a final volume of 100 ul contained, 50 ul One-Step RT PCR mix (Applied Biosystems, Inc., Foster City, CA), 1 pmol each of the amplification primers, and 0.4 pmol of the probe. The reaction conditions included 30 min at 48 ^{0}C for the RT reaction, 10 min at 95 ^{0}C to activate the Taq enzyme followed by 50 cycles of 30 secs at 95 ^{0}C, alternating with 1 min at 60^0 C in ABI 7900 Sequence Detector. Alternatively, the beads can be suspended in 100 ul of reaction mix containing 2 ul of Superscript III RT/Platinum Taq mix (Invitrogen Corporation, Carlsbad, CA), 50 ul of 2X Reaction mix, 4 mM $MgSO_4$, 2 ul of Rox, 1 pmol each of the amplification primers, 0.4 pmol of the probe. The reaction conditions include 15 min at 50 ^{0}C for the RT reaction, 2 min at 95 ^{0}C to activate the enzyme followed by 50 cycles of 30 sec at 95 ^{0}C, alternating with 1 min at 60 ^{0}C in ABI 7900 Sequence Detector. PCR amplification primers corresponding to conserved regions within capsid (VWNV1-VWNV3) were chosen for robust amplification and detection. They were:

VWNVA1-CCGGGCTGTCAATATGCTAAA (Sense Primer-nt129-149)

(SEQ ID NO: 1)

VWNVA2-AGCCCTCTTCAGTCCAATCAAG (Anti-sense Primer-nt174-195)

(SEQ ID NO: 2)

VWNVA3-xCGGAATGCCCCGCGTGTTGz (Probe-nt153-171)

(SEQ ID NO: 3).

Where X= 6-FMA, and Z = linker plus Tamra.

(All numberings are as in GenBank deposit-AF196835)